

PYTHAGOREAN THEOREM GROUP PROJECTS

In class you have seen just one way to prove the Pythagorean Theorem; however there are many different ways to prove this important theorem. In fact, there are hundreds of known ways to prove the Pythagorean Theorem. Mathematicians and amateurs over the centuries have delighted in finding new ways to prove this oldest and, to many, most elegant of theorems.

Your group project this grading period is to duplicate one of those proofs. Each group will be given a different proof of the Pythagorean Theorem, and will present their work to the class starting in about a week. Each group will also hand in a written proof on the day they make their presentation to the class. You will be graded on both the class presentation and the written proof. Things I will look for when I grade will be the correctness of your proof, how it is presented (both in class and on paper), what materials or visual aids you use in the presentation, and how well your group worked cooperatively. Each of the school's computer labs are equipped with Geometer's Sketchpad so please make use of our labs. The project will be worth 50 points.

Since this is a group project, you will need to divide up the work. Each group will need to decide how best to share the responsibilities. For example, you could designate one person to write up the proof for handing in, one to prepare visual aids for the class presentation (such as computer apps, overheads, posters, etc.), others to do the actual presentation, or any other variation of this "division of labor" as long as everyone is involved about equally. You will also need to let me know, somehow, who is responsible for what since part of your grade reflects how well you all contributed.

One final note, I have given hints for each proof. You will need to do some problem solving of your own, but each proof uses geometry or algebra you either already should know or are studying in this chapter. I caution you to make sure that each member of your group can explain and complete the proof on their own before you present to the class.

The rubric for the project is as follows:

Presentation of the Project - 25 points

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| • Correctness. No errors, correct use of formal geometry | 10 points |
| • Presentation. Clear, interesting and full group participation | 10 points |
| • Materials. Use of technology, manipulatives, etc. | 5 points |

Written Portion of the Project - 20 points

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| • Correctness. No errors, correct use of formal geometry | 10 points |
| • Biography. Length (1 page), accuracy, scope | 5 points |
| • Format. Neat, grammar and correct notation | 5 points |

Group Participation - 5 points

- Full group participation during class time
- Completion of reflection sheet by each group member